

SCOPE OF CLAIM

1. A heat-meltable fluoropolymer composite composition comprising a heat-meltable fluoropolymer fine powder and a layered-compound organically modified with
5 tetraphenyl phosphonium ions.
2. The heat-meltable fluoropolymer composite composition according to claim 1., wherein the heat-meltable fluoropolymer fine powder is an agglomerate powder having average particle size of not more than 10 μm which comprises agglomerated colloidal fine particles of heat-meltable fluoropolymer.
- 10 3. The heat-meltable fluoropolymer composite composition according to claim 1 or 2, wherein said heat-meltable fluoropolymer is a polymer or copolymer of a monomer selected from the group consisting of tetrafluoroethylene, hexafluoropropylene, perfluoro(alkylvinylether), vinylidene fluoride and vinyl fluoride, and a copolymer of any of these monomers and ethylene or propylene.
- 15 4. The heat-meltable fluoropolymer composite composition according to any one of claims 1 through 3, wherein at least part of said heat-meltable fluoropolymer is heat-meltable fluoropolymer containing a functional group.
5. The heat-meltable fluoropolymer composite composition according to any one of claims 1 through 4, wherein said layered-compound is at least one selected from the
20 group consisting of clay mineral, mica and graphite which is not more than 10 μm in average particle size.
6. The heat-meltable fluoropolymer composite composition according to claim 5., wherein said layered-compound is clay mineral or mica.
7. The heat-meltable fluoropolymer composite composition according to claim 6.,
25 whose nitrogen gas transmission rate is not more than 0.60 times as high as that of

heat-meltable fluoropolymer containing no layered-compound.

8. The heat-meltable fluoropolymer composite composition according to claim 6 or 7, whose storage modulus at 25°C is not less than 1.5 times as high as that of heat-meltable fluoropolymer containing no layered-compound.

9. A process for manufacturing a heat-meltable fluoropolymer composite composition which comprises a process (I) in which a heat-meltable fluoropolymer composite composition is obtained by mixing a heat-meltable fluoropolymer fine powder and a layered-compound and a process (II) in which such heat-meltable fluoropolymer composite composition thus obtained is melt-mixed by exerting shear stress by means of a melt-mixing extruder.

10. The process for manufacturing a heat-meltable fluoropolymer composite composition according to claim 9, wherein said heat-meltable fluoropolymer fine powder is an agglomerate powder having average particle size of not more than 10 μm which comprises agglomerated colloidal fine particles of heat-meltable fluoropolymer.

11. The process for manufacturing a heat-meltable fluoropolymer composite composition according to claim 9 or 10, wherein the mixing of a heat-meltable fluoropolymer fine powder and a layered-compound is carried out by use of a high-speed rotary mixer whose blades or cutter knives have a circumferential velocity of not less than 35 m/sec.

12. A heat-meltable fluoropolymer composite composition which is obtained by a process (I) in which a heat-meltable fluoropolymer composite composition is obtained by mixing a heat-meltable fluoropolymer fine powder and a layered-compound and a process (II) in which such heat-meltable fluoropolymer composite composition thus obtained is melt-mixed by exerting shear stress by means of a melt-mixing extruder.

13. The heat-meltable fluoropolymer composite composition according to claim 12., wherein said layered-compound is organically modified with onium ions.

14. The heat-meltable fluoropolymer composite composition according to claim 12., wherein said layered-compound is at least one selected from the group consisting of clay mineral, mica and graphite which is not more than 10 μm in average particle size.

15. The heat-meltable fluoropolymer composite composition according to any one of claims 12 through 14, whose nitrogen gas transmission rate is not more than 0.60 times as high as that of heat-meltable fluoropolymer containing no layered-compound.

16. The heat-meltable fluoropolymer composite composition according to any one of claims 12 through 15, whose storage modulus at 25°C is not less than 1.5 times as high as that of heat-meltable fluoropolymer containing no layered-compound.

17. The heat-meltable fluoropolymer composite composition according to any one of claims 12 through 16, whose specific thermal conductivity is not less than 2 times as high as that of heat-meltable fluoropolymer containing no layered-compound.